

SECTION 130

GRAY IRON AND DUCTILE IRON FITTINGS

130.1 GENERAL

Fittings required in the installation of ductile iron, polyvinyl chloride and asbestos cement pipes shall be either gray iron or ductile iron, as specified herein.

130.2 REFERENCES

- 130.2.1 AWWA
C 104 C 153
C 110

130.3 COATINGS

All fittings shall be coated in accordance with AWWA C 110 and cement-mortar lined, per AWWA C 104.

130.4 MECHANICAL JOINT FITTINGS

130.4.1 Mechanical joint fittings shall be used in all buried installations. The type of fitting shall be as required to install the line in conformance with the grade and alignment shown on the construction drawings or as directed by the ENGINEER.

130.4.2 Mechanical joint fittings shall conform to the requirements of AWWA C 110 and C 153.

130.4.3 Fittings shall be installed in accordance with manufacturer's published recommendations. Malleable iron or gray iron bolts, as per AWWA C 110, shall be used to complete the connection. Bolts shall be of sufficient length to provide a minimum of three threads beyond the tightened nut. The bolts shall be tightened evenly such that the distance between the gland and the face of the flange is approximately equal around the circumference of the pipe. All bolts shall be tightened with a torque-measuring wrench and the torque values shall be as follows:

<u>Fitting Size</u>	<u>Torque Range</u>
4" thru 24"	75 - 90
30" thru 36"	100 - 120
Larger than 36"	120 - 150

130.5 FLANGED JOINT FITTINGS

130.5.1 Flanged end fittings shall only be used where specifically required on the construction drawings or as directed by the ENGINEER.

130.5.2 Bolting material for pipe connection and installation shall be the same as Subsection 130.4.3.

130.6 RESTRAINTS

130.6.1 Thrust restraint blocking shall be provided at all fittings and shall be constructed as per Standard Detail Drawings. A polyethylene liner, minimum thickness of 8 mils, shall be installed between the fitting and any concrete.

130.6.2 In certain applications it may be necessary to utilize restrained joint fittings in lieu of concrete blocking. Prior to the installation, the CONTRACTOR shall submit manufacturer's literature with sufficient data to the ENGINEER for review and approval in writing.

130.7 PRESSURE RATING

All fittings shall have a minimum pressure rating of 250 psi.

130.8 MEASUREMENT AND PAYMENT

130.8.1 Fittings shall be measured by the pound (weights are listed in AWWA C 110) and shall include the fitting and installation thereof. Should the weight for the installed fitting not be included in AWWA C 110, then the weight listed in the manufacturer's printed literature shall apply. Payment shall be made at the unit price per pound as shown in the Bid Proposal.

130.8.2 Restrained joint fittings shall be measured and paid for in the same manner as Subsection 130.8.1.